



*technê* do know something impressive (and often measurable), they convince themselves that they know more than they really do. Given the magnitude of the claims that O. makes for his book, the result reminds us of the wisdom of Socrates' assessment.

To close with a passage from Aristotle, the greatest theoretician of practical reason of them all: in *Nicomachean Ethics* 1.3 he states that 'the same level of precision (*to akribes*) should not be sought in all rational accounts (*logois*)' (1094b12–3). Instead, 'it is characteristic of an educated person to seek precision in each genus to the extent that the nature of the subject being studied (*hê tou pragmatos phusis*) allows' (109b23–5). While it is entirely appropriate to expect clear and decisive proofs – or decision trees and two-by-two matrices – from 'a mathematician' (1094b26), it would be inappropriate to make such a demand in 'the study of politics' (*politikê*) whose subject matter is 'the fine (*kala*) and just things' (1094b14). Perhaps it is because Aristotle holds this view that O. devotes so few of his many pages to him.

*Boston University*

DAVID ROOCHNIK  
roochnik@bu.edu

## THE FIGURE OF THALES

ROSSETTI (L.) *Thales the Measurer*. Pp. xii + 214, figs. London and New York: Routledge, 2022. Cased, £120, US\$160. ISBN: 978-0-367-68709-0.

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Bemoaning the oversimplification of Thales' legacy in contemporary scholarship (and Aristotle's enduringly long shadow: Aristotle was simply not interested in the quantitative research that is Thales' hallmark), R. aims to interrogate what the Milesian thinker accomplished, what he thought and what he wrote. In other words, R.'s goal is to restore the sum of Thales' research from 'impoverished oblivion' and to infuse the thinker afresh with a personality as a self-disciplined, methodical, rigorous researcher who identified intellectual objectives, found effective ways to circumvent obstacles, worked out how to acquire relevant information, and who correctly made pertinent inferences from the data by means of objective, repeatable practices. Thales' legacy is all the more impressive because he lacked models and intellectual predecessors. Thales was often the first (and occasionally the only) thinker to investigate key questions. R. also seeks to disambiguate apocryphal traditions (including the anecdote about Thales and the olive presses of Chios: DK A10) from credible, persuasive evidence and to establish a tentative corpus of authentic fragments. Throughout, R. provides close readings of the primary evidence, casting the net more broadly than the 54 *testimonia* included in Diels–Kranz, and taking into consideration G. Wöhrlé's (*Die Milesier: Thales* [2009]) significant collection of 500 *testimonia* (from 120 authors).

The book falls into five parts, each with three to five short, focused chapters. In Part 1, 'Approaching Thales', R. surveys Thales' intellectual, social and cultural environment. Noteworthy are Miletus' strategic position as a centre of commercial and colonial activity on the western coast of Turkey, ensuring resources and networks as well as the development of coin money (with stamps of *polis* names), and a simple, fully alphabetic

writing system restricted to little more than 20 symbols (in contrast with hieroglyphic and cuneiform systems with over 700 discrete symbols each): this economy of symbols fostered literacy and in turn enabled the promulgation of knowledge (and the concept of written documents). T. Rhill, *Greek Science* (1999, pp. 8–9), had made much the same observations on the unique mix of factors at Miletus that contributed to the development of Greek rational philosophy (absent from R.'s bibliography). During Thales' day, as R. (and others) observe, the intellectual environment was transitioning from the heroic themes and rules of conduct that feature in epic (which established shared Hellenic culture) to a reflective rationality that aimed to explain and interpret, with an emphasis on truth beyond sheer narrative, including the emergence of witty tales with moral lessons that must be decoded (the 'fable' and the riddle), indicating an environment where higher standards of reasons hold sway. Thales was working in an age when a 'new reflective rationality had already gained currency' (p. 28). Extrapolating a persuasive biography from a close reading of the biographical sources, R. forefronts the 'many traces of Thales' rare fame' (p. 43).

In Part 2, 'Five Quantitative Inquiries', R. explores five Thalean initiatives to quantify geometrical and astronomical queries, a trajectory that suggests a nascent appreciation of the abstract: the height of pyramids (A21), the dates of solstices, equinoxes and the settings of significant constellations (i.e. Pleiades) (A18), an explanation of the causes of eclipses (A3, 5) (R. dismisses the tradition of forecasting eclipses, omitted from reliable sources, as unsubstantiated), and the angular amplitudes of the solar and lunar discs (A19). R. examines the state of contemporary mathematical culture (including Thales' lack of computational knowledge: addition, subtraction, multiplication, division). He questions why Thales might be interested in such investigations (calendrical concerns), and he explores several possible (if not probable) methods for determining quantities/dates. These methods are elucidated with illustrations as relevant (e.g. the height of a pyramid, likely a thought experiment: would Thales even have been granted access to royal tombs? Why would the Egyptians care about the height of a pyramid?). R. persuasively argues against the conjecture of R. Hahn, *The Metaphysics of the Pythagorean Theorem: Thales, Pythagoras, Engineering, Diagrams, and the Construction of the Cosmos out of Right Triangles* (2017, p. 97) and others that Thales would have been aware of and understood the elaborate calculations recorded in the Rhind papyrus (1900–1500 BCE: there is simply no evidence that this mathematical culture endured into the seventh/sixth centuries BCE [p. 51]).

In Part 3, 'Three Further Investigations on Earth, Waters and Rocks', R. surveys Thales' initiatives in understanding the natural world: surface water as a cause of earthquakes (A12, 15), the cause of the annual Nile flood (A16; Seneca, *NQ* 4.2.22) and the 'ensouled' properties of magnets and electrum (A3, 22). In particular, R. criticises Aristotle's unsubstantiated generalisations regarding Thales' understanding of water, which 'has a crucial role in the formation and survival of all living beings' (p. 120). According to R., *arche* as conceived by Aristotle (as the building blocks of matter) would have been anathema to Thales. To be sure, we cannot know what Thales really proposed, but other scholars do not share R.'s categorical dismissal (Thales may very well have been curious about cosmogony and physics). R. also contradicts himself, elsewhere, positing 'Thales said' (e.g. φησὶν; *ut Thales ait*) as providing 'traces of the words chosen by Thales' (p. 176; in other words, authentic fragments). Here R. argues that Aristotle considered Thales' 'it is water' (ὕδωρ εἶναι) obscure and meaningless. Yet R. does not explain what he thinks Thales may have meant by ἀρχή (R., fragment 2).

Part 4, 'Other Investigations: Real and Presumed', is a miscellany. R. makes further comment on Thales' interest in astronomy (the nature of stars and the moon and an

anachronistic attribution of a division of the sky into five zones: A3a, 13c, 19; Ps.-Hyginus 2.2.3). R. explores the likely theoretical measurement of the distance between a ship and the shore (with illustrations and variable possible methodologies: A20). R. also interrogates apocryphal, clichéd accounts of the impoverished philosopher (Thales' supposed get-rich-quick olive-press scheme at Chios), the absent-minded intellectual (falling into a well: A9) and the diversion of the Halys River, so Croesus' troops could ford it (A6: contradicting both archaeological evidence and Thales' political objections to a Miletan–Lydian alliance: A1).

In Part 5, 'Final Remarks', R. presents a 'tentative' collection (in the original languages and English translation) of fourteen passages that seem to preserve at least the 'traces' of Thales' original words, each with brief commentary, repeating earlier observations.

The book is capably translated from Italian, and R. reads the primary evidence cautiously and closely. Periodic summaries are clarifying and welcome, especially for the mathematically faint-of-heart (e.g. pp. 56, 92). The text is well documented, and the notes are relevant and informative. Some inconsistencies between chapters are in evidence, especially regarding the presentation of primary evidence: Greek is consistently presented in English in the text and often rendered in Greek in the notes; Latin *testimonia* are usually offered as translations in the text, but occasionally *testimonia* are in Latin (e.g. p. 80, where an English translation is lacking from the notes; p. 174, where the notes include a translation). While R. tries to be cautious, he sometimes introduces his own unsubstantiated conjectures: what evidence, for example, do we have that Thales travelled to Athens (pp. 38–9)? There is a good deal of repetition, especially in the primary evidence: for example, a fragment of Cleostratus of Tenedos is repeated word for word on facing pages (pp. 80 and 81). Nonetheless, this is an interesting monograph that succeeds in showing Thales' profound influence over his intellectual successors and the singular breadth of his achievements, for which he was deservedly honoured during his lifetime (designated as one of the seven *sophoi* by the Athenians and extolled by Alcaeus, likely at a public festival in Mytilene [DK 11A11a]).

William & Mary

GEORGIA L. IRBY  
glirby@wm.edu

## THE PRESOCRATICS AND THEIR RECEPTION

HELLMANN (O.), STROBEL (B.) (edd.) *Rezeptionen der Vorsokratiker von der Antike bis in die Gegenwart. Akten der 22. Tagung der Karl und Gertrud Abel-Stiftung vom 29. bis 30. Juni 2018 in Trier.* (Philosophie der Antike 42.) Pp. xii + 372. Berlin and Boston: De Gruyter, 2022. Cased, £100, €109.95, US\$126.99. ISBN: 978-3-11-076142-9.

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